



#16/Reply Brief
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S/N 09/893109

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	KUROKAWA ET AL	Examiner:	M. CHARLES
Serial No.:	09/893,109	Group Art Unit:	3682
Filed:	JUNE 27, 2001	Docket No.:	8373.245US01
Title:	LOW NOISE ROLLER CHAIN		

CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being deposited with the United States Postal Service, as first class mail, with sufficient postage, in an envelope addressed to: Mail Stop Appeal Brief-Patents, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on May 24, 2004.

By: 
Name: Sherry Lumsden

APPELLANT'S REPLY

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

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PATENT TRADEMARK OFFICE

Dear Sir:

This Reply is presented in response to the Examiner's Answer filed March 23, 2004.

II. RELATED APPEALS AND INTERFERENCES

Appellant states that there are no appeals or interferences that would directly affect or be directly affected by the outcome of the present appeal.

VI. ISSUES PRESENTED FOR REVIEW

Appellant hereby corrects the statement of Issue 3 in "Appellant's Brief on Appeal," to read as follows: "Whether claims 1 and 32, under 35 U.S.C. § 103 (a) are non-obvious on consideration of Japanese Patent Doc. 7-83290 (Japan '290)." That is, Appellant corrects the numeral "3" to be -- 2 --.

NOTED 8/07/04
M. Charles

VII. GROUPING OF CLAIMS

Contrary to the Examiner's assertion, as stated in "Appellant's Brief on Appeal," claims 1-2 are considered to stand or fall together; claim 3 supports a separate argument for patentability. As indicated in Issue 2 of Part VI of the Brief, claim 3 had been rejected under 35 U.S.C. §112, first paragraph. A separate argument for patentability to overcome this rejection was given on pages 6-7 of Appellant's Brief under the subtitle "Claim 3 is enabled." The patentability of claim 3 was not otherwise questioned by the Examiner. Hence, it is not necessary for Appellant to address other patentability statutes.

VIII. ARGUMENT

Appellant herewith responds to the Examiner's argument. The Examiner states on page 4, lines 4-6 of the Examiner's Answer that:

In response to applicant's arguments above, the examiner clearly states in the final rejection that the percentage of the ratios of the metallic roller to the elastic roller is not the patentable issue, but the result of the claimed invention.

In the final rejection, on page 3, paragraph 5, lines 10-12, the Examiner states:

While the Japanese document does not show precise ranges of width ratios in the drawings, the present disclosure does not show any unexpected results.

The Examiner has based his argument unexpected results.

Applicant in the specification in the "Background of the Invention," at page 2, line 19 to page 3, line 4, states:

The conventional measures incorporated in the roller chains against noises generated when the roller chains engage a sprocket are, however, not fully satisfactory. For example, the annular cushion member (elastic roller) fitted on the same bushing together with the metallic roller has a noise suppressing effect which is greatly influenced by the material, the outside diameter as compared to that of the metallic roller (i.e., the amount of elastic deformation) and width of the elastic

roller. Additionally, since the roller chain is used under severe operating conditions involving meshing engagement with the sprocket at high speeds with collision accompanied therewith, a sufficient care should be taken not only to suppress noises but also to maintain the durability of the roller chain.

Thus, the problem which Applicant was addressing was both to reduce noise and maintain durability of a roller chain. Applicant realized conventional measures for trying to achieve these goals were not satisfactory because they were so greatly influenced by "...the material, the outside diameter as compared to that of the metallic roller (i.e., the amount of elastic deformation) and width of the elastic roller." As stated in the specification at page 6, lines 15-19:

The percentage of the width W to an overall width $(W+w)$ of the roller assembly 19 is set to fall in a certain range, as will be described later. The eligible (sic) for the elastic roller 18 include natural rubbers, and synthetic rubbers such as polyurethane, or synthetic resin elastomers.

Thus, Applicant's solution to the problem presented by the ambiguity in conventional measures for reducing noise and maintaining durability in roller chains was to do extensive testing and identify a percentage of width of the elastic roller relative to the rigid roller such that noise was reduced and durability was maintained, and such that the elastic roller was not material dependent.

The unexpected results are not the suppression of noise and the durability of the elastic roller as the Examiner indicates were the objectives of JP '290; rather, the unexpected results were to find a ratio range of the width of the elastic roller relative to the metallic roller such that noise is suppressed and durability is maintained, and further such that the elastic roller is not particularly material dependent. Such a ratio is structural, but finding the range was unexpected. The ambiguity of the conventional measures was eliminated.

Appellant further emphasizes that JP '290 fails to disclose numerical values that could define size or dimensions such as width and thickness of the shock absorbing material (i.e., the elastic roller). JP '290 states at paragraph [0018] that the shock absorbing material 16 is formed into an annular member of rectangular cross section with its outside diameter larger than an outside diameter of the roller 15. The inside diameter of the shock absorbing material 16 is slightly larger than an outside diameter of the bushing 12. The width W2 of the shock absorbing material 16 is set relative to the intervals W1 of the inside link plates 13 and the length L of the roller 15 as $W2 < W1 - L$ and $L + W2 \approx T2$ where T2 is the effective width of the tooth bottom of the sprocket S. Thus, JP '290 discloses a size or dimension of the shock absorbing material 16 such that it does not interfere with, but rather fits appropriately with the sprocket and the other parts of the roller chain. JP '290 does not show or point to a range of particular dimensions (width or thickness) of the shock absorbing material 16 necessary for achieving the objectives of noise suppression and durability, without material dependence.

For these reasons, as well as the reasons provided in Appellant's Brief on Appeal, it is submitted that the rejection of claims 1 and 2 should be withdrawn.

Respectfully Submitted,

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Dated: May 24, 2004

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By: 

Name: Sherry Lumsden

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Sir:

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- ☒ Appellant's Reply
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